

Name of Assignment: **Problem Solving/Data Analysis Unit Plan**

**Date Due: December 7**

Faculty to be contacted for specific questions: Mark Roddy

**Objectives:**

**1. Planning and content knowledge**

- Plans focused and sequenced instruction aligned with curriculum standards and outcomes;
- Uses knowledge of students' personal, socio-cultural, and linguistic characteristics to inform instruction;
- Uses knowledge of students' families and communities to inform instruction.

**2. Assessing learning**

- Plans assessments to monitor and support student learning;
- Analyzes student work related to standards and learning targets;
- Uses a variety of assessments to inform instruction;
- Provides students with feedback to guide further learning.

**3. Applying culturally and linguistically responsive instruction**

- Uses knowledge of students' lives to inform instruction;
- Creates and nurtures with students a classroom culture of inclusion and advocacy;
- Applies appropriate and varied instructional strategies;
- Monitors students' progress and differentiates instruction accordingly;
- Understands language demands and differentiates instruction accordingly;
- Collaborates with families and communities to facilitate student achievement.

**4. Demonstrating a commitment to the ethical and professional dimensions of teaching**

- Identifies and implements tenets of justice and diversity that are culturally responsive to facilitate student achievement;
- Understands and appreciates the importance of actualizing goals of multicultural education and the benefits of a just and diverse world;
- Demonstrates collaborative, professional growth-centered practices;
- Demonstrates practices that are informed by a values position reflecting understanding of the political, ethical and moral complexities of schooling;
- Prepares students to be responsible citizens for an environmentally sustainable, globally interconnected, and diverse democratic society.

**Rationale for the assignment:**

Research in mathematics and science education points out the importance of allowing students to encounter substantial problems that provide a setting for the construction of conceptual understanding, the development of procedural fluency and the use of increasingly sophisticated reasoning and problem solving skills. It is important that students experience the processes of problem formulation or clarification, data gathering, analysis, synthesis, solution and communication of results. Classroom-level assessment is an integral part of the learning process informing teacher decision making and providing feedback to students and parents as well as teachers. Teachers must consciously orchestrate opportunities for students to engage in constructive, focused scientific and/or mathematical discourse based on sound use of academic language that is central to the discipline. All these things rely on teachers' knowing their students well, their prior academic achievements and struggles, and the strengths they bring from their communities and family histories.

***NOTE: You must earn a grade of B (3.0) or higher on each unit plan in order to successfully complete TEED 521 and to continue in the program.***

***Please note also that because of the timing of this unit in the course of the quarter, it is not possible to revise and re-submit this unit.***

Here are the tasks you will need to complete, with references to their placement in the rubric that follows.

## **1. CONTENT**

1.1 Consider the classes you teach and within one class select a single topic(or closely related set of topics) as the central focus for this unit plan (e.g., dividing common fractions).

1.2 Give a rationale for your selection of this topic. Why is it important for students to learn? Consider and describe the relevant ethical issues that are important in teaching this unit.

1.3 Describe what students will know and be able to do if they are successful with this topic.

1.4 From this description develop two to five unit-level learning targets. (Targets must be classified as facts, concepts, skills, or dispositions). For each unit-level learning target, as appropriate, cite one state standard that is most closely related.

1.5 Discuss the ways in which these learning targets may be associated with the development of conceptual understanding, procedural fluency, reasoning and problem solving skills.

3.1 Develop a summative assessment instrument(s) that will give you information about students' levels of achievement with regard to each of your unit-level learning targets.

1.6 Develop an Essential Question (e.g., "How do we divide fractions and why should I care?").

## **2. LEARNERS**

2.1 With your central focus (1.1) and your Essential Question (1.6) in mind, consider your students and their lives. Describe the community, the school, the students' families, and finally the students themselves. Describe the students in terms of

- a. Academic development (2.1a);
- b. Academic language development (2.1b);
- c. Social and emotional development (2.1c);
- d. Family / community / cultural assets (2.1d).
- e. Dispositions related to the central focus (2.1e)

2.2 Describe the ways in which the characteristics described above (2.1 a - e) influence your decisions about instructional strategies and learning tasks.

2.3 In view of what you know about your learners, the school and the community, create a Web page that introduces the unit to your students' families. Be sure to describe the highlights of the unit as well as some ways in which families can support learning at home. Be prepared to supply hard copies to families without Web access. Insert that hardcopy in your unit plan along with a URL for the Web site if it is "published."

### **3. INSTRUCTION**

Write three to seven lesson plans that will facilitate student learning and attainment of the unit level learning targets. (If more than seven lessons will be needed to address the topic, additional lessons may be described in summary fashion.) Each lesson plan must include:

- Title and expected duration of the lesson (How long will it take?) (3.1i)
- One to four lesson-level learning targets for both content and academic language as needed. (Cite related unit-level learning targets and state or Common Core standards.) (3.1ii)  
Evidence of achievement, stated in terms of student behaviors, for each learning target. (3.1iii)
- Assessment(s), either formal or informal, formative or summative. At least 1 rubric-based assessment and one student self-assessment must be developed (or adapted) and included. You must have one summative assessment that provides information about student achievement with respect to all of your unit-level learning targets. Include scoring guides appropriate for all assessment(s). (3.2)
- Narrative descriptions of each lesson (use of ed tech included as appropriate). (3.3i)
- Resources and materials needed to complete the lesson. (3.3ii)
- Identify relevant co-teaching strategies. (3.3iii)

### **4. ANALYSIS AND REFLECTION**

Explain how the elements of the lessons you have developed are sequenced so as to enable the students in your class to achieve your learning targets. Indicate how specific research and theory has informed your decisions. (4.1)

Identify oral and written language demands inherent in the learning tasks and explain how the tasks help students meet these demands. (4.2)

Describe ways in which your instructional plans address special needs and abilities within your class. (4.3)

### **5. FORMATTING THE UNIT PLAN**

On the title page identify unit title, school, grade level, the date, and your name and e-mail address. (5.1)

Number all pages. (5.2)

Attend to editing to ensure a well-written unit plan. (5.3)

At the end of your unit please include an annotated bibliography of resources you consulted in APA format. (5.4)

If unit was done in collaboration with a peer(s), describe how you worked together. (5.5)

Note: You will upload your unit plan to TaskStream and submit a hard copy on the due date to Mark Roddy

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